Project Proposal

Proposal Title: **Strawberry River Restoration Phase III** **Proposal Number:** 763

DWR Region: Central Region **Lead Agency:** DWR **County:** Wasatch

Project Manager: Richard Hepworth **PM Phone:** 8014915678 **Regional Priority:** Within Focus Area

Project Type: Aquatic Habitat **Proposed Start Date:** 07/15/2007

Project Location: From Bull Springs Road upstream to Highway 40

Project Description: Restoration of 3-5 miles of the Strawberry River in Wasatch County

Description of Problem/Need: The Strawberry River throughout the project area has and continues to suffer from variable rates of streambank erosion and degradation. The river is eroding laterally contributing fine sediments to the stream, and increasing width to depth ratios. There is very little vegetative cover, and summer daytime water temperatures often reach sub-lethal levels for trout (22-23oC). A proper functioning riverine system could lead to increased recruitment of cutthroat trout and kokanee salmon into Strawberry Reservoir. Additionally, other aquatic and terrestrial organisms would benefit from a more natural, properly functioning system.

Objectives:

- Restore and maintain the natural dimension, pattern, and profile of the Strawberry River
- Improve upstream fish migration from Strawberry Reservoir
- Stabilize eroding banks
- Reestablish a more natural riparian plant community
- Reduce stream temperatures
- Reconnect river to historic flood plain
- Improve and increase complexity of aquatic habitat
- Reduce fine sediment and improve spawning habitats

Relevance to Strategic Plans: The project will result in a proper functioning riverine system with natural stability and proper biological function. We anticipate, increased productivity from adult cutthroat trout and kokanee salmon, and improved rearing conditions for young-of-year fishes. Additionally, habitat surveys conducted on adjacent stream segments during 1997 indicate that increasing the amount of cover by 20% could yield a 13 lb/acre increase in trout biomass in this section of stream. It is anticipated that the project will increase the amount of cover by at least 20%. The project should also result in improved habitat for other aquatic organisms and the reestablishment of a healthy riparian is expected to benefit a wide variety of wildlife species, especially resident and migratory passerine birds.

Potential Risks: Loss of spawning habitat for Bonneville cutthroat trout and kokanee salmon if project is not completed. Additional sedimentation of stream and Reservoir

Proposed Methods: A stream restoration plan will be prepared for each stage of restoration beginning with stage one. Each restoration plan will consist of a detailed description of restoration work to be completed.

The proper alignment and placement of rock and log vanes, root wads, and other structures will be based on accepted principles of applied fluvial geomorphology. In addition, only structures suitable for the stream type based on the Rosgen Classification system will be used. The restoration effort will focus on a number of techniques that have been proven to enhance the natural function of the stream (i.e., establish proper dimension, pattern and profile). Restoration work will be done only after NEPA process is completed by the USFS and stream alteration and archeological clearance permits are received from the State and Division of Water Rights. The NEPA process will begin in January 2007.

A single thread channel with meanders and proper channel sinuosity will be maintained. Rock and log vanes will be placed at critical locations to protect stream banks and allow riparian vegetation to reestablish. Vertical banks will be sloped to allow vegetative cover to establish. Willow clumps will be transplanted from other Strawberry Valley locations to positions along the newly sloped stream bank. In addition, willow clippings will be used to accelerate the re-establishment of a riparian community. Root wads and logs will also be used to protect stream banks and provide cover for trout. Coconut fiber will be used on outside bends of meanders to provide additional bank protection until vegetation becomes established. Sloped banks and other disturbed areas will be reseeded with species currently found in the area that are appropriate for the site including water requirements.

Channel realignment may be necessary, were excessive degradation has occurred, in order to reconnect the stream with the flood plane. When channel realignment is necessary, the old channel will be converted into oxbow ponds when possible, increasing the complexity of the aquatic habitat.

Shapefile Name: HPD2009\Proposal\CRO\763.shp **Seed Source:** GBRC

UPCD Reg Team Coord Date: 01/15/2008

Proposed NEPA Action:

Project Proposal

Proposed Arch Action: To be completed as part of NEPA Process

☑ **Vegetation Monitoring** ☑ **Wildlife Monitoring**

Monitoring Information: Project monitoring will continue to improve our understanding and ability to improve riverine systems and enable us to quantify the effects of restoration on the biological and physical aspects of the system. Monitoring of the fish populations and physical characteristics of the River will occur annually for at least five years. Monitoring will consist of utilizing photo points throughout the project to document recovery rates of vegetation compared with preconstruction conditions and whether the dimensions of the restored river are maintained. Cross sections will be surveyed to monitor aggredation/degradation of the river and determine stability of the river. Functionality of the individual structures placed in the river will be analyzed to make sure they are functioning properly and determine whether adjustments need to be made. Fish populations will also be monitored to document any changes in spawning activity, density, biomass, and recruitment to Strawberry Reservoir

Grazing Management:

SPECIES BENEFITING

American Beaver	Kokanee Salmon	Bonneville Cutthroat Trout	Western Toad

LAND OWNERSHIP

Owner		Acres
USFS		0
	Total	0

PROPOSED FUNDING

Source	Amount Requested	Date Approved	Amount Approved
Blue Ribbon (Federal Aid)	$50,583.00	04/23/2008	$50,583.00
Habitat Acct 174	$50,583.00	04/23/2008	$50,583.00
USFS	$30,000.00		$30,000.00
Totals	***$131,166.00***		***$131,166.00***

PROPOSED BUDGET

Item	Description	DWR Account	In Kind/ Partner Contrib.
Equipment Rental	Trac-how, Front End Loader, Dump Truck	$39,410.00	$0.00
Materials and Supplies	Rock, Logs, Coconut Fiber, Geo-textile, Supplies	$35,212.00	$0.00
Personal Services	Operators, Seasonals	$18,744.00	$0.00
NEPA	USFS	$0.00	$30,000.00
Motor Pool	Service Truck, Pickup	$6,780.00	$0.00
Equipment transport		$1,020.00	$0.00
	Totals	***$101,166.00***	***$30,000.00***

PROPOSED FUNDING ALLOCATION

Funding Type	Funding Percent
Sport Fish	68

Nongame Fish		10
Nongame Wildlife		20
Upland Game		2
	Total	***100.00%***

Project Map:

Strawberry River Restoration - Bull Springs Road phase